

IN THE CLAIMS:

Please cancel Claims 19 through 36 herein. None of the claims have been amended herein. All of the pending claims 1 through 18 are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as previously amended.

Listing of Claims:

1. (Previously presented) A method for processing semiconductor dice on a wafer comprising:
determining defects on the semiconductor dice on the wafer;
classifying each of the defects by size and location, determining and classifying comprising
classifying each of the defects into one of size range populations of defects;
assigning a weight to each of the defects representing an estimated effect of each defect on die yield for the semiconductor dice;
determining an estimated die yield loss (DYL) for each semiconductor die of the semiconductor dice based on number and weight of the defect(s) on each semiconductor die of the semiconductor dice, determining the estimated DYL including calculating an estimated die yield loss having lower and upper limits;
summing all of the DYL of the semiconductor dice on the wafer to obtain a wafer yield loss (WYL);
subdividing the defects into a plurality of size range populations of defects for the semiconductor dice; and
determining a relative contribution of each size range population of defects of the plurality of the semiconductor dice to the wafer yield loss WYL.

2. (Previously presented) The method of claim 1, wherein determining the DYL comprises calculating an estimated die yield loss having lower and upper limits of zero and 1.0, respectively.

3. (Previously presented) The method of claim 2, wherein the lower limit comprises a representation of no yield loss attributable to the defects and the upper limit comprises a representation of fatal yield loss attributable to the defects.

4. (Previously presented) The method of claim 1, wherein subdividing the defects into the plurality of size range populations of defects comprises subdividing the defects into a plurality of 0 to 10 size range populations.

5. (Previously presented) A method for semiconductor dice on a wafer comprising:
determining defects on the semiconductor dice on the wafer;
classifying each of the defects by size and location, determining and classifying comprising
classifying each of the defects into one of size range populations of defects;
assigning a weight to each of the defects representing an estimated effect of the defects on die
yield for the semiconductor dice;
determining an estimated die yield loss (DYL) for each semiconductor die of the semiconductor
dice based on number and weight of the defects on each semiconductor die of the
semiconductor dice;
summing all DYL of the semiconductor dice on the wafer to obtain a wafer yield loss (WYL);
subdividing the defects into a plurality of size range populations of defects; and
determining a relative contribution of each size range population of defects of the plurality to the
WYL, wherein determining the relative contribution of each size range population of
defects of the plurality to the wafer yield loss comprises:

discarding data for each size range population of defects of the plurality and calculating, in turn, a drop in the WYL for combined size range populations excepting the discarded data; summing the calculated WYL to obtain a drop sum; dividing the drop sum to determine a relative drop attributable to each size range population of defects of the plurality; and randomly selecting defects from each size range population of defects of the plurality.

6. (Previously presented) The method of claim 5, further comprising:
randomly selecting defects from each size range population of defects of the plurality, a number selected from each size range population of defects of the plurality in proportion to the relative contribution thereof, the randomly selected defects being weighted to represent defects having a greatest effect on yield losses.
7. (Previously presented) The method of claim 6, further comprising:
reviewing the randomly selected defects and determining in-line action required to reduce wafer yield losses.
8. (Previously presented) The method of claim 7, wherein reviewing the randomly selected defects includes visual inspection by a microscope.
9. (Previously presented) The method of claim 7, wherein determining in-line action comprises determining if an individual semiconductor die of the semiconductor dice on the wafer is acceptable to proceed in a manufacturing process.
10. (Previously presented) The method of claim 5, wherein determining defects on the semiconductor dice is performed by an automated surface inspection tool.

11. (Previously presented) A method for semiconductor dice in wafer form comprising:

determining defects of the semiconductor dice;

classifying each of the defects by size and location;

assigning a weight to each of the defects representing an estimated effect of each defect on die yield;

determining an estimated die yield loss (DYL) for each of the semiconductor dice based on number and weight of the defects on each of the semiconductor dice;

summing all DYL of the semiconductor dice on the wafer to obtain a wafer yield loss (WYL);

subdividing the defects into a plurality of size range populations of defects;

determining a relative contribution of each size range population of defects of the plurality to the WYL;

randomly selecting defects from each size range population of defects of the plurality, a number selected from each size range population of defects of the plurality in proportion to the relative contribution thereof, the randomly selected defects weighted to represent defects having a greatest effect on yield losses; and

reviewing the randomly selected defects.

12. (Previously presented) The method of claim 11, further comprising:

reviewing the randomly selected defects and determining in-line action required to reduce the WYL.

13. (Previously presented) The method of claim 11, wherein determining defects and classifying each of the defects comprises classifying each of the defects into one of the plurality of size range populations of defects.

14. (Previously presented) The method of claim 11, wherein determining the DYL comprises calculating an estimated die yield loss having lower and upper limits of zero and 1.0, respectively.

15. (Previously presented) The method of claim 14, wherein the lower limit comprises a representation of no yield loss attributable to the defects and the upper limit comprises a representation of fatal yield loss attributable to the defects.

16. (Previously presented) The method of claim 11, wherein subdividing the defects into the plurality of size range populations of defects comprises subdividing the defects into a plurality of 0 to 10 size range populations.

17. (Previously presented) The method of claim 11, wherein determining the relative contribution of each size range population of defects of the plurality to the WYL comprises: discarding data for each size range population of defects of the plurality and calculating, in turn, a drop in WYL for combined size range populations excepting the discarded data; summing the calculated drop in WYL to obtain a drop sum; and dividing the drop sum to determine a relative drop attributable to each size range population of defects of the plurality.

18. (Previously presented) The method of claim 12, wherein determining in-line action required to reduce the WYL comprises determining if an individual semiconductor die of the semiconductor dice in wafer form is acceptable to proceed in a manufacturing process.

19.-36. (Cancelled)